

COTTAGE POLLUTION CONTROL PROGRAM

CENTRAL REGION

HALIBURTON COUNTY

Horseshoe Lake

Paudash Lake

HASTINGS COUNTY

Paudash Lake

DISTRICT MUNICIPALITY OF MUSKOKA

Lake of Bays

Browning Island (Lake Muskoka)

1985

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**Ministry
of the
Environment**

**G. MIERZYNSKI, Director
Central Region**

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COTTAGE POLLUTION CONTROL PROGRAM
MUSKOKA-HALIBURTON
FIRST PRINTING APRIL, 1986

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COTTAGE POLLUTION CONTROL PROGRAM

1985

HALIBURTON COUNTY

HORSESHOE LAKE	- ANSON, HINDON, MINDEN TOWNSHIPS
PAUDASH LAKE	- CARDIFF TOWNSHIP

HASTINGS COUNTY

PAUDASH LAKE	- FARADAY TOWNSHIP
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DISTRICT MUNICIPALITY OF MUSKOKA

LAKE OF BAYS	- TOWNSHIP OF LAKE OF BAYS - TOWN OF HUNTSVILLE
BROWNING ISLAND (LAKE MUSKOKA)	- TOWN OF BRACEBRIDGE

REPORT PREPARED BY

ABATEMENT EAST SECTION

MUSKOKA-HALIBURTON DISTRICT OFFICE

GRAVENHURST

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PREFACE

Ontario's thousands of beautiful inland lakes provide an abundant resource for recreational enjoyment. To protect the quality of these waters, a delicate environmental balance must be maintained.

A heavy influx of people may subject a lake and its surrounding environment to great stress. Uncontrolled development and imprudent use of our recreational lakes may cause their deterioration and destroy their natural qualities.

The Ontario Ministry of the Environment is attempting to bring some of these stress factors under control by a variety of programs. One of these, the Cottage Pollution Control Program, was initiated in 1970 to study the cottage waste disposal problem, to evaluate existing waste disposal systems and to enforce repairs to those found to be unsatisfactory.

SUMMARY

The objective of the program is to examine and evaluate all existing sewage disposal systems on recreational lakes and to ensure satisfactory correction to all faulty systems.

The detection work is conducted by trained seasonal staff (students) who survey all the systems on selected lakes. The surveyed systems are evaluated by Environmental Technicians. The systems found to be malfunctioning are checked by an Abatement Officer who negotiates an agreement with the owner for corrective work to be executed. The corrected system is examined again to ensure compliance with the agreement and pertinent regulations.

In 1985, 930 private sewage disposal systems were inspected on Lake of Bays; Lake Muskoka (Browning Island); District Municipality of Muskoka and Horseshoe Lake, Haliburton County and Lower Paudash Lake, Hastings and Haliburton County. The inspection of these systems indicated that 37% were performing satisfactorily, 37% were seriously substandard, 16% were discharging washwater or solid waste onto the ground surface, 2% were direct polluters and 8% were unclassified after the initial detection survey. Appendix I is a summary of the inspection results.

As of December 31, 1985, 116 agreements for corrective work to be carried out had been signed by the owners. Corrections have been completed and inspected for 84 systems; 127 systems remain uncorrected, however, negotiations are continuing in anticipation of correction by owners in the spring of 1986.

COTTAGE POLLUTION CONTROL SURVEY

Preparation

During the fall of 1984 and winter of 1985, a reconnaissance and mapping program was undertaken on selected lakes by Ministry of the Environment personnel.

The crew counted the number of establishments on each lake. Every one hundredth establishment on the shoreline was photographed and described. The cottage and non cottage properties such as marinas, camp grounds and lodges were then plotted on maps.

Data obtained from the field work, other Provincial and Municipal agencies and Cottage Associations were used to prepare a work schedule for the survey crews.

The co-operation of Cottage Associations contributed greatly to the success of the program. Prior to the commencement of the survey of each lake, the Cottage Association is contacted. They are given a brief outline of the survey procedures that would be followed and also the information that would be required from each cottager. In certain cases, a mid-summer meeting is arranged with the Association during which abatement procedures are discussed.

In the event that a Cottage Association does not exist, notices are posted throughout the area, where people may congregate (local stores, post offices, public docks, etc.). This situation usually exists along rivers or small lakes.

DETECTION SURVEYS

The crews, each composed of two students, began the survey of the lake by preparing a description log. Each building which is called a establishment was systematically numbered, accurately described and plotted onto a map to facilitate the location of the premises at a future time by detection crews or abatement staff. When the description logging is completed, copies are made and distributed to each crew.

The detection teams visited each establishment on the lake. The owner or occupant was interviewed and the lot surveyed. The information collected included type of building, number of occupants, type of use, water supply and treatment, sewage disposal methods and type, location, size and set back of on-site sewage disposal systems, type and depth of soil and physical evidence of malfunctioning systems. All data collected was entered on survey forms.

From this information the performance of the system is evaluated and the system for each establishment is given a preliminary performance classification. The classification is then verified by the supervisor.

Classification of Sewage Disposal Systems

The sewage disposal systems of all premises surveyed were classified into one of the following groups.

1. Satisfactory

A system which meets the current standards of good design, construction and location, is properly maintained, is capable of handling sewage flows and is not causing a pollution problem.

2. Satisfactory Performance

A system which may be slightly deficient in design, setback or construction with respect to current standards. The deficiency, however, cannot be of a nature that would constitute a pollution problem.

3. Seriously Substandard

A system which does not meet current standards of design, construction and location, is in a state of neglect or has a limited life. The system is not presently causing a pollution problem, however the

system due to a serious deficiency will not be capable of treating the sewage flows in the near future. The owner is notified in writing of the deficiency and advised that serious consideration should be given to upgrading in the near future.

4. Nuisance (washwater is also known as grey water and is classified as sewage)

A system that causes grey water to be exposed on the surface of the ground either directly through a waste pipe or escaping from a leaching pit. Such a condition is considered as a public health nuisance. Phosphates and other nutrients from grey water discharges encourage weed growth and effect the aesthetic quality of the lake.

5. Nuisance (toilet or solid waste)

A system that causes sewage to be exposed on the surface of the ground, either directly through a pipe or escaping from some part of the sewage disposal system. Also included in this classification is "solid waste" or garbage of a kind which can cause a "Nuisance"; for example, domestic garbage containing food waste.

6. Direct Pollution

A system which is permitting sewage or leachate to contaminate the ground or surface water.

7. Unclassified (temporarily)

A system which has been given a preliminary classification by the student inspector where he feels he cannot use any of the preceding classifications and has doubts about the system, or any part of it. These systems require further inspection by the supervisor who will attempt to make a final classification after a thorough investigation.

8. Unclassified

A system which is not possible by the end of the survey to make a classification. This category includes only a few abandoned premises in a dilapidated condition with a system that is obviously not in use and could not be used.

Corrective Procedure

After a file is examined by the supervisor and the original classification is confirmed or altered, it is referred to an Environmental Officer if abatement of a problem is required. The Officer then interviews the owner to advise him of the findings and discuss corrective action. If the owner agrees with the findings, a corrective program is initiated. He is asked to sign a "Pollution Abatement Report" describing the problems found and the corrective measures required to be completed by a specific date. A final inspection is carried out upon completion of the corrective work and the sewage disposal system file is appropriately reclassified. Occasionally an owner refuses to comply with a correction program and legal action must be initiated.

In the case of commercial establishments, this procedure is often more complex, requiring an engineering study and the submission of plans and soil analysis reports for approval. Except where there is direct pollution, the owner is contacted and is instructed to submit plans for corrective measures to be completed prior to the opening of the next commercial season.

Where a direct pollution problem exists, corrective action must be initiated immediately to prevent any further deterioration of water quality in the lake.

Methods of Sewage Disposal

The cottage areas of Muskoka-Haliburton are mostly unsewered and therefore the cottage owner must use on site sewage treatment and disposal. These systems range from a privy and leaching pit to a proprietary aerobic sewage treatment plant. The type of system used will vary according to lot size, topography, soil type, hydrologic conditions and sewage flows. Most cottagers choose the septic tank systems as their method of sewage disposal. This system uses a septic tank and leaching bed. The tank removes solids and the leaching bed uses soil to reduce BOD, nutrients, and micro-organisms. Bacteria reduces the sewage to compounds and elements capable of use by the natural environment. Since soil is used as the treatment medium, the system size varies according to type of soil and sewage flows.

Another method of treatment and disposal is the proprietary aerobic package treatment plant. In this system oxygen is mixed with the sewage creating a suitable environment for aerobic bacteria which produces an effluent of improved quality. Therefore the filter bed can be reduced in size.

When sewage flows, topography and soil conditions preclude the installation of a septic tank system or proprietary aerobic package treatment plant, a holding tank is often used. It is not considered a treatment system, and is only intended for sewage retention until it can be removed and taken to an approved disposal site by a licensed sewage hauler.

The privy, incinerating, chemical, recirculating and composting toilets are accepted methods of disposal, however, they are not acceptable for grey water disposal. The leaching pit can be used only for the treatment of grey water in limited water usage situations. A septic tank is not part of the system. Again soil is used as the treatment medium, therefore lot area, topography, soil type, hydrology and grey water flows are assessed when examining sites.

The Muskoka-Haliburton area is located on the Precambrian Shield with glacial till soil and many granite rock outcroppings, making many lots naturally unsuitable for installation of private sewage disposal systems. Most sites must be modified by the addition of filter material, slope adjustments and drainage alterations.

ABATEMENT PROGRESS FROM 1984 COTTAGE POLLUTION CONTROL
PROGRAM

During the Summer of 1984, the Cottage Pollution Control Program was conducted on the following lakes: Lake of Bays, District Municipality of Muskoka; Twelve Mile Lake and Little Boshkung Lake, Haliburton County. A total of 517 private sewage disposal systems were inspected. Of these, 27% were performing satisfactorily, 43% were found to be seriously substandard, 19% were discharging washwater or solid waste onto the ground surface, 2% were direct polluters and 0.9% were unclassified after the initial detection survey. All of the owners with seriously substandard systems were contacted and advised that their system should be watched carefully and may require updating in the near future. As of January 1, 1986, corrective action on 73% of the systems which required upgrading was completed in Muskoka-Haliburton. The majority of the owners of the remaining systems requiring upgrading have signed agreements for completion during the Summer of 1986.

Legal action is being initiated against the few remaining owners who have refused to respond to attempts by Environmental Officers to have corrective action carried out.

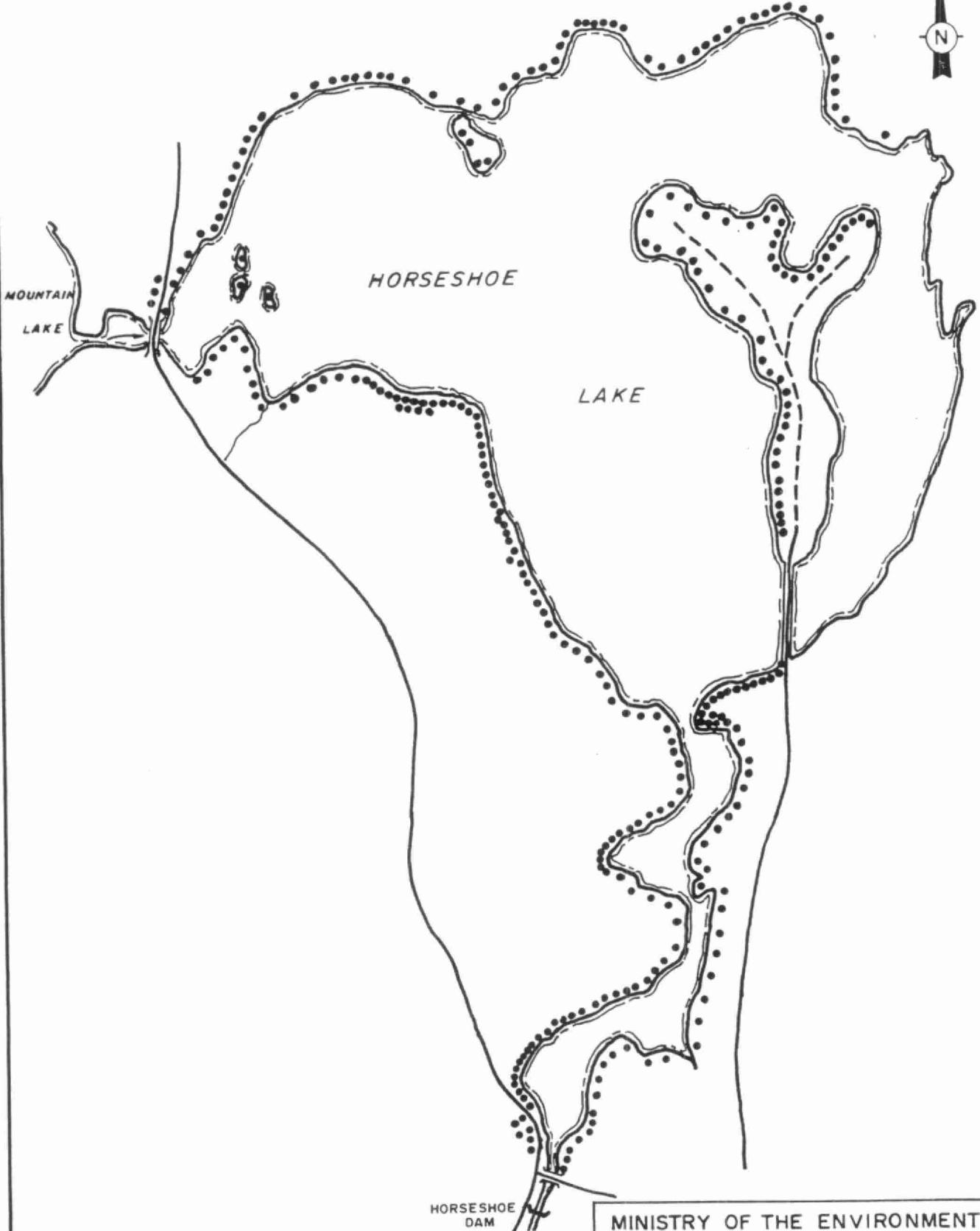
HORSESHOE LAKE

The geographic description of Horseshoe Lake or Elsie Lake is the County of Haliburton, Township of Anson, Hindon and Minden, Latitude 45 degrees 01 minutes, Longitude 78 degrees 39 minutes. The perimeter of the lake is 16.76 kilometres and the surface area is 258 hectares. The maximum water depth is 23 metres and the lake is part of the Lake Ontario Drainage Basin.

Horseshoe Lake lies in the Precambrian Shield. The Island and Southern portion of the lake (narrows) lies on a glacial spillway and is characterized by deposits of stratified sandy soil. The narrows between Mountain lake and Hoseshoe also shows the characteristics of a spillway. The remainder consists of shallow till and rock ridges.

There were 289 private sewage disposal systems inspected on Horseshoe Lake during the Summer of 1985. Of these, 120 or 42% were classified as seriously substandard, 49 or 19% were unsatisfactory due to improper disposal of solid waste or washwater, 9 or 3% were classified as direct polluters and 22 systems or 7% were unclassified by the survey crew at the end of the survey.

As of December 31, 1985, 47 faulty systems had been corrected and 13 owners have signed agreements to complete corrections during the construction season of 1986. The remainder were notified by letter of their problems and Ministry Environmental Officers are currently directing their efforts toward obtaining commitments from these owners.



HORSESHOE
DAM

MINISTRY OF THE ENVIRONMENT

HORSESHOE LAKE
(ELSIE LAKE)
ANSON, HINDON, MINDEN TOWNSHIP
HALIBURTON COUNTY

SCALE: N.T.S.

DRAWN BY: E.D.B. DATE: MARCH, 1986

CHECKED BY: F.P.C. DRAWING NO.: 8603

LAKE MUSKOKA
(BROWNING ISLAND)

The geographic descriptiton of Browning Island, Lake Muskoka is the District of Muskoka, Town of Bracebridge, Muskoka North Ward, Latitudte 45 degress 01 minutes, Longitude 79 degrees 25 minutes. The perimeter of the Island is 14.81 kilometres. Lake Muskoka is part of the Lake Huron Drainage Basin.

The Island lies in the Precambrian Shield. The Island is characterized by shallow till and rock ridges.

There were 199 private sewage disposal systems inspected on Browning Island during the Summer of 1985. Of these, 28 or 23% were classified as seriously substandard, 27 or 22% were unsatisfactory due to improper disposal of solid waste or washwater, 4 or 3% were classified as direct polluters and 9 systems or 8% were unclassified by the survey crew at the end of the survey.

As of December 31, 1986, 16 faulty systems had been corrected and 11 owners have signed agreements to complete corrections during the construction season of 1986. The remainder were notified by letter of their problems and Ministry Environmental Officers are currently directing their efforts toward obtaining commitments from these owners.



MINISTRY OF THE ENVIRONMENT

BROWNING ISLAND

MUSKOKA NORTH WARD
TOWN OF BRACEBRIDGE

SCALE : N.T.S.

DRAWN BY : P.O.S. DATE : MARCH, 1986

CHECKED BY : F.P.C. DRAWING NO. : 8602

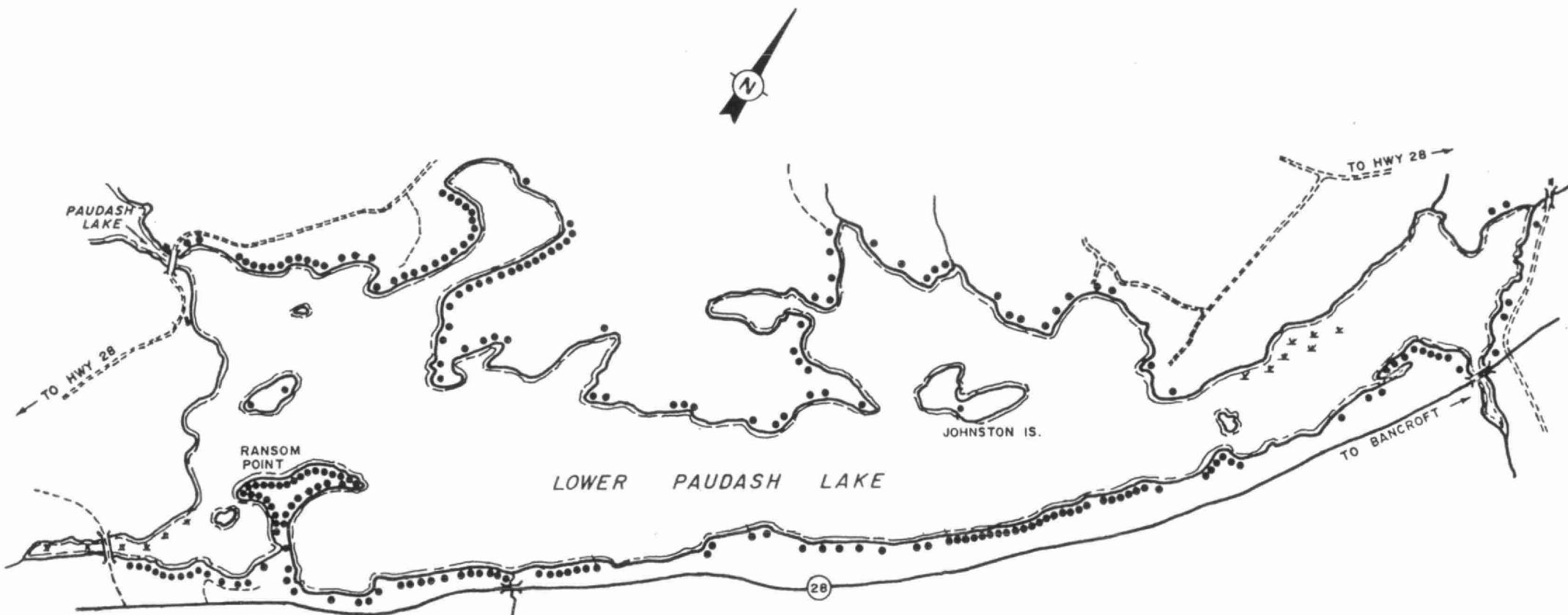
LOWER PAUDASH LAKE

The geographic description of Lower Paudash Lake is the County of Haliburton, Township of Cardiff, Latitude 44 degrees 58 minutes, Longitude 78 degrees 01 minutes. The perimeter is 27.05 kilometres. The Lake is part of the Lake Ontario Drainage Basin.

Lower Paudash Lake lies in the Precambrian Shield with its east shore laying at the end of a glacial spillway and its characteristic deposits of stratified sandy soil. The Spillway ends at approximately the boundary between Cardiff and Faraday Township. The remainder of the shoreline is characterized by shallow till and rock ridges.

There were 256 private sewage disposal systems inspected on Lower Paudash Lake during the Summer of 1985. Of these, 127 or 50% were classified as seriously substandard, 37 or 14% were unsatisfactory due to improper disposal of solid waste or washwater, 1 or .3% were classified as direct polluters and 15 systems or 5.7 % were unclassified by the survey crew at the end of the survey.

As of December 31, 1985, 13 faulty systems had been corrected and 3 owners have signed agreements to complete corrections during the construction season of 1986. The remainder were notified by letter of their problems and Ministry Environmental Officers are currently directing their efforts toward obtaining commitments from these owners.



MINISTRY OF THE ENVIRONMENT	
LOWER PAUDASH LAKE	
CARDIFF TWP., HALIBURTON COUNTY	
SCALE:	N.T.S.
DRAWN BY:	E.D.B.
DATE:	MARCH, 1986
CHECKED BY:	F.P.C.
DRAWING NO:	8601

LAKE OF BAYS

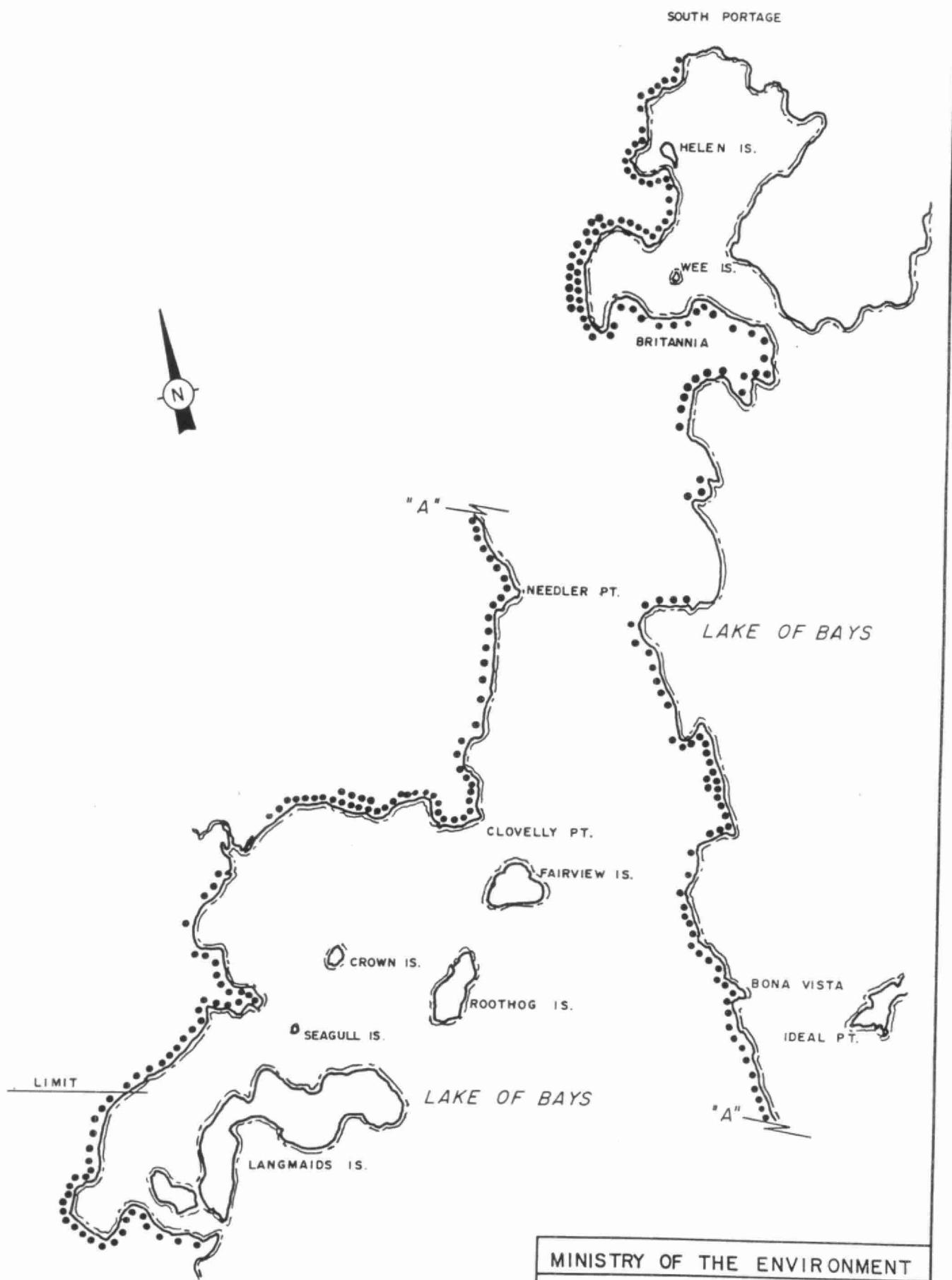
The geographic description for that part of Lake of Bays surveyed during 1985 is the District Municipality of Muskoka, Town of Huntsville, Brunel Ward and Township of Lake of Bays, Franklin Ward, Latitude 45 degrees 15 minutes, Longitude 79 degrees 04 minutes. Approximately 24 kilometres of lake shoreline were examined.

Headwater lakes to the northwest as far as Algonquin Park drain through this lake. These waters are part of the Greater Lake Huron Watershed.

The shoreline physiography is typical of many lakes on the Precambrian Shield, shallow till and rock ridges.

There were 266 private sewage disposal systems inspected on Lake of Bays during the summer of 1985. Of these, 120 or 42% were classified as seriously substandard, 49 or 17 % were unsatisfactory due to improper disposal of solid waste or washwater, 9 or 32% were classified as direct polluters and 22 systems or 7% were unclassified by the survey crew at the end of the survey.

As of December 31, 1985, 8 faulty systems had been corrected and 5 owners have signed agreements to complete corrections during the construction season of 1986. The remainder were notified by letter of their problems and Ministry Environmental Officers are currently directing their efforts toward obtaining commitments from these owners.



MINISTRY OF THE ENVIRONMENT
LAKE OF BAYS
BRUNEL WARD, TOWN OF HUNTSVILLE
FRANKLIN WARD
TWP OF LAKE OF BAYS
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APPENDIX I

PRELIMINARY CLASSIFICATION OF SYSTEMS INSPECTED

1985

Body of Water	Number of Systems Inspected	Classification of Systems*															
		Satisfactory		Satisfactory Performance		Seriously Substandard		Nuisance (Wash Water)		Nuisance (Solid Waste)		Direct Polluter		Unclassified Temporarily			
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
Lake Muskoka (Browning Is.)	119	13	11	38	32	28	23	9	8	18	15	4	3	9	8	0	0
Lake of Bays	266	17	6	108	40	71	27	17	7	21	8	4	2	28	10	0	0
Horseshoe	289	8	3	81	28	120	42	29	10	20	7	9	3	22	7	0	0
Lower Paudash	256	3	1	73	29	127	50	24	9	13	5	1	0.38	13	5	2	0.7
TOTALS	930	41	5	300	32	346	37	79	9	72	7	18	2	72	7	2	<1

*See page 4 for definition of classifications

LAKE SURVEYED

DISTRICT MUNICIPALITY OF MUSKOKA
HALIBURTON COUNTY

<u>YEAR OF SURVEY</u>	<u>LAKE</u>	<u>NUMBER OF SYSTEMS</u>
		<u>INSPECTED</u>
1967	Six Mile (Crooked Bay)	165
1969	Riley	150
1970	Sparrow	302
1971	Muskoka (Muskoka Bay)	270
1971	Leonard	112
1974	Bass (Ryde)	23
1974	Clear (Wood)	155
1974	Harp	78
1974	Kahshe	481
1974	Twelve Mile Lake	168
1974	Wood	205
1975	Muskoka(Bala Bay)	280
1975	Dark	38
1975	Gull (Muskoka)	138
1975	Gull (Haliburton)	413
1975	Silver	37
1975	Three Mile	542
1976	Joseph (Ames Point)	25
1976	Muskoka (Sandy Bay)	17
1976	Dickie	121
1976	Go Home Bay	119
1976	Loon	175
1976	Muldrew	378
1976	Ril	140
1976	Turtle	63
1977	Honey Harbour (South Bay)	834
1977	Muskoka (Milford Bay)	292
1977	Paudash (Haliburton)	364
1977	Joseph (Woodroffe Bay)	44
1978	Honey Harbour (North Bay)	476
1978	Severn River	833
1978	Indian River	67
1979	Esson	117
1979	Kashagawigamog (North Half)	533
1979	Muskoka	463
1979	Miskwabi	78
1979	Nine Mile	138
1980	Black Lake	57
1980	Kashagawigamog (South Half)	273
1980	Muskoka	175
1980	Soyer's	142
1980	Stewart	97
1981	Morrison	175

1981	Muskoka (Broadley Point)	239
1981	Salerno	165
1981	Sunny	56
1982	Boshkung	348
1982	Lake of Bays (Narrows)	127
1982	Muskoka (East Bay, Kettles)	227
1982	St. George	105
1982	Little Dudman	69
1982	Long	88
1982	Negaunee	15
1983	Clement	35
1983	Haliburton (South Bay)	124
1983	Lake of Bays (Narrows Cont'd)	138
1983	Long (Muskoka)	110
1983	Muskoka (Dudley Bay)	132
1983	Oxbow	134
1983	Waseosa	139
1983	Young	67
1984	Lake of Bays	187
1984	Twelve Mile	249
1984	Little Boshkung	81
1985	Lake Muskoka (Browning Island)	119
1985	Lake of Bays	260
1985	Horseshoe	289
1985	Lower Paudash	256

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